

SEQUENCE LISTING

<110> Bass, Michael B.
Jing, Shuqian

<120> Fibroblast Growth Factor-Like Molecules and Uses
Thereof

<130> 01-006-A1

<140>

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<150> 60/188,786

<151> 2000-03-13

<160> 11

<170> PatentIn Ver. 2.0

<210> 1

<211> 1330

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (610)..(1245)

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cgactgcacc tcctcgaagt tgctggctgg ctttggcaag tgcaggaatg gtgttttgtg 120

agggcatgga tggagaagtg ccaagggccc ctgtttggtc acttccgaag agcaaaaacg 180

tgttgagagg agaccgggtt aagatttcaa acagaacctc cccagcgcgc atgaaaggac 240

ttgattagca tatgtcaaga ggacccgctt atatactcg tgtgtatgta cacaggactc 300

tgatctgac agtttgcgga attggagccc cagccaacag ccctagtcct agtattggca 360

gcggcagcta tagatatattc tgcagagcca gcagccggct cccacctacc caaggagaga 420

agatcgctcc aagacagtga gagcttcctt gccatttcag tgcaaagtcc ctccggagcg 480

acctcagagg agtaaccggg ccttaacttt ttgcgctcgt tttgctataa tttttctcta 540

tccacctcca tcccaccccc acaacactct ttactggggg ggtcttttgt gttccggatc 600

tccccctcc atg gct ccc tta gcc gaa gtc ggg ggc ttt ctg ggc ggc ctg 651

Met Ala Pro Leu Ala Glu Val Gly Gly Phe Leu Gly Gly Leu

1

5

10

gag ggc ttg ggc cag cag gtg ggt tcg cat ttc ctg ttg cct cct gcc 699

Glu Gly Leu Gly Gln Gln Val Gly Ser His Phe Leu Leu Pro Pro Ala

15

20

25

30

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ggg gag cgg ccg ccg ctg ctg ggc gag cgc agg agc gcg gcg gag cgg 747
Gly Glu Arg Pro Pro Leu Leu Gly Glu Arg Arg Ser Ala Ala Glu Arg
          35                      40                      45

agc gcc cgc ggc ggg ccg ggg gct gcg cag ctg gcg cac ctg cac ggc 795
Ser Ala Arg Gly Gly Pro Gly Ala Ala Gln Leu Ala His Leu His Gly
          50                      55                      60

atc ctg cgc cgc cgg cag ctc tat tgc cgc acc ggc ttc cac ctg cag 843
Ile Leu Arg Arg Arg Gln Leu Tyr Cys Arg Thr Gly Phe His Leu Gln
          65                      70                      75

atc ctg ccc gac ggc agc gtg cag ggc acc cgg cag gac cac agc ctc 891
Ile Leu Pro Asp Gly Ser Val Gln Gly Thr Arg Gln Asp His Ser Leu
          80                      85                      90

ttc ggt atc ttg gaa ttc atc agt gtg gca gtg gga ctg gtc agt att 939
Phe Gly Ile Leu Glu Phe Ile Ser Val Ala Val Gly Leu Val Ser Ile
          95                      100                      105                      110

aga ggt gtg gac agt ggt ctc tat ctt gga atg aat gac aaa gga gaa 987
Arg Gly Val Asp Ser Gly Leu Tyr Leu Gly Met Asn Asp Lys Gly Glu
          115                      120                      125

ctc tat gga tca gag aaa ctt act tcc gaa tgc atc ttt agg gag cag 1035
Leu Tyr Gly Ser Glu Lys Leu Thr Ser Glu Cys Ile Phe Arg Glu Gln
          130                      135                      140

ttt gaa gag aac tgg tat aac acc tat tca tct aac ata tat aaa cat 1083
Phe Glu Glu Asn Trp Tyr Asn Thr Tyr Ser Ser Asn Ile Tyr Lys His
          145                      150                      155

gga gac act ggc cgc agg tat ttt gtg gca ctt aac aaa gac gga act 1131
Gly Asp Thr Gly Arg Arg Tyr Phe Val Ala Leu Asn Lys Asp Gly Thr
          160                      165                      170

cca aga gat ggc gcc agg tcc aag agg cat cag aaa ttt aca cat ttc 1179
Pro Arg Asp Gly Ala Arg Ser Lys Arg His Gln Lys Phe Thr His Phe
          175                      180                      185                      190

tta cct aga cca gtg gat cca gaa aga gtt cca gaa ttg tac aag gac 1227
Leu Pro Arg Pro Val Asp Pro Glu Arg Val Pro Glu Leu Tyr Lys Asp
          195                      200                      205

cta ctg atg tac act tga agtgcgatag tgacattatg gaagagtcaa 1275
Leu Leu Met Tyr Thr
          210

accacaacca ttctttcttg tcatagttcc catcataaaa taatgaccca agcag 1330

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<210> 2
<211> 211
<212> PRT
<213> Homo sapiens

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<400> 2

Met Ala Pro Leu Ala Glu Val Gly Gly Phe Leu Gly Gly Leu Glu Gly
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Leu Gly Gln Gln Val Gly Ser His Phe Leu Leu Pro Pro Ala Gly Glu
20 25 30

Arg Pro Pro Leu Leu Gly Glu Arg Arg Ser Ala Ala Glu Arg Ser Ala
35 40 45

Arg Gly Gly Pro Gly Ala Ala Gln Leu Ala His Leu His Gly Ile Leu
50 55 60

Arg Arg Arg Gln Leu Tyr Cys Arg Thr Gly Phe His Leu Gln Ile Leu
65 70 75 80

Pro Asp Gly Ser Val Gln Gly Thr Arg Gln Asp His Ser Leu Phe Gly
85 90 95

Ile Leu Glu Phe Ile Ser Val Ala Val Gly Leu Val Ser Ile Arg Gly
100 105 110

Val Asp Ser Gly Leu Tyr Leu Gly Met Asn Asp Lys Gly Glu Leu Tyr
115 120 125

Gly Ser Glu Lys Leu Thr Ser Glu Cys Ile Phe Arg Glu Gln Phe Glu
130 135 140

Glu Asn Trp Tyr Asn Thr Tyr Ser Ser Asn Ile Tyr Lys His Gly Asp
145 150 155 160

Thr Gly Arg Arg Tyr Phe Val Ala Leu Asn Lys Asp Gly Thr Pro Arg
165 170 175

Asp Gly Ala Arg Ser Lys Arg His Gln Lys Phe Thr His Phe Leu Pro
180 185 190

Arg Pro Val Asp Pro Glu Arg Val Pro Glu Leu Tyr Lys Asp Leu Leu
195 200 205

Met Tyr Thr
210

<210> 3

<211> 208

<212> PRT

<213> Homo sapiens

<400> 3

Met Ala Pro Leu Gly Glu Val Gly Asn Tyr Phe Gly Val Gln Asp Ala
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Val Pro Phe Gly Asn Val Pro Val Leu Pro Val Asp Ser Pro Val Leu
20 25 30

Leu Ser Asp His Leu Gly Gln Ser Glu Ala Gly Gly Leu Pro Arg Gly

35	40	45																	
Pro	Ala	Val	Thr	Asp	Leu	Asp	His	Leu	Lys	Gly	Ile	Leu	Arg	Arg	Arg				
50						55					60								
Gln	Leu	Tyr	Cys	Arg	Thr	Gly	Phe	His	Leu	Glu	Ile	Phe	Pro	Asn	Gly				
65					70					75					80				
Thr	Ile	Gln	Gly	Thr	Arg	Lys	Asp	His	Ser	Arg	Phe	Gly	Ile	Leu	Glu				
				85					90					95					
Phe	Ile	Ser	Ile	Ala	Val	Gly	Leu	Val	Ser	Ile	Arg	Gly	Val	Asp	Ser				
			100					105					110						
Gly	Leu	Tyr	Leu	Gly	Met	Asn	Glu	Lys	Gly	Glu	Leu	Tyr	Gly	Ser	Glu				
	115						120					125							
Lys	Leu	Thr	Gln	Glu	Cys	Val	Phe	Arg	Glu	Gln	Phe	Glu	Glu	Asn	Trp				
130						135					140								
Tyr	Asn	Thr	Tyr	Ser	Ser	Asn	Leu	Tyr	Lys	His	Val	Asp	Thr	Gly	Arg				
145					150					155					160				
Arg	Tyr	Tyr	Val	Ala	Leu	Asn	Lys	Asp	Gly	Thr	Pro	Arg	Glu	Gly	Thr				
			165						170					175					
Arg	Thr	Lys	Arg	His	Gln	Lys	Phe	Thr	His	Phe	Leu	Pro	Arg	Pro	Val				
			180					185					190						
Asp	Pro	Asp	Lys	Val	Pro	Glu	Leu	Tyr	Lys	Asp	Ile	Leu	Ser	Gln	Ser				
		195					200					205							

<210> 4
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 <212> PRT
 <213> Rattus norvegicus

 <400> 4
 Met Ala Pro Leu Gly Glu Val Gly Ser Tyr Phe Gly Val Gln Asp Ala
 1 5 10 15
 Val Pro Phe Gly Asn Val Pro Val Leu Pro Val Asp Ser Pro Val Leu
 20 25 30
 Leu Ser Asp His Leu Gly Gln Ser Glu Ala Gly Gly Leu Pro Arg Gly
 35 40 45
 Pro Ala Val Thr Asp Leu Asp His Leu Lys Gly Ile Leu Arg Arg Arg
 50 55 60
 Gln Leu Tyr Cys Arg Thr Gly Phe His Leu Glu Ile Phe Pro Asn Gly
 65 70 75 80

Thr Ile Gln Gly Thr Arg Lys Asp His Ser Arg Phe Gly Ile Leu Glu
85 90 95

Phe Ile Ser Ile Ala Val Gly Leu Val Ser Ile Arg Gly Val Asp Ser
100 105 110

Gly Leu Tyr Leu Gly Met Asn Glu Lys Gly Glu Leu Tyr Gly Ser Glu
115 120 125

Lys Leu Thr Gln Glu Cys Val Phe Arg Glu Gln Phe Glu Glu Asn Trp
130 135 140

Tyr Asn Thr Tyr Ser Ser Asn Leu Tyr Lys His Val Asp Thr Gly Arg
145 150 155 160

Arg Tyr Tyr Val Ala Leu Asn Lys Asp Gly Thr Pro Arg Glu Gly Thr
165 170 175

Arg Thr Lys Arg His Gln Lys Phe Thr His Phe Leu Pro Arg Pro Val
180 185 190

Asp Pro Asp Lys Val Pro Glu Leu Tyr Lys Asp Ile Leu Ser Gln Ser
195 200 205

<210> 5

<211> 207

<212> PRT

<213> Homo sapiens

<400> 5

Met Ala Glu Val Gly Gly Val Phe Ala Ser Leu Asp Trp Asp Leu His
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Gly Phe Ser Ser Ser Leu Gly Asn Val Pro Leu Ala Asp Ser Pro Gly
20 25 30

Phe Leu Asn Glu Arg Leu Gly Gln Ile Glu Gly Lys Leu Gln Arg Gly
35 40 45

Ser Pro Thr Asp Phe Ala His Leu Lys Gly Ile Leu Arg Arg Arg Gln
50 55 60

Leu Tyr Cys Arg Thr Gly Phe His Leu Glu Ile Phe Pro Asn Gly Thr
65 70 75 80

Val His Gly Thr Arg His Asp His Ser Arg Phe Gly Ile Leu Glu Phe
85 90 95

Ile Ser Leu Ala Val Gly Leu Ile Ser Ile Arg Gly Val Asp Ser Gly
100 105 110

Leu Tyr Leu Gly Met Asn Glu Arg Gly Glu Leu Tyr Gly Ser Lys Lys
115 120 125

Leu Thr Arg Glu Cys Val Phe Arg Glu Gln Phe Glu Glu Asn Trp Tyr
130 135 140

Asn Thr Tyr Ala Ser Thr Leu Tyr Lys His Ser Asp Ser Glu Arg Gln
145 150 155 160

Tyr Tyr Val Ala Leu Asn Lys Asp Gly Ser Pro Arg Glu Gly Tyr Arg
165 170 175

Thr Lys Arg His Gln Lys Phe Thr His Phe Leu Pro Arg Pro Val Asp
180 185 190

Pro Ser Lys Leu Pro Ser Met Ser Arg Asp Leu Phe His Tyr Arg
195 200 205

<210> 6

<211> 208

<212> PRT

<213> Mus musculus

<400> 6

Met Ala Pro Leu Gly Glu Val Gly Ser Tyr Phe Gly Val Gln Asp Ala
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Val Pro Phe Gly Asn Val Pro Val Leu Pro Val Asp Ser Pro Val Leu
20 25 30

Leu Asn Asp His Leu Gly Gln Ser Glu Ala Gly Gly Leu Pro Arg Gly
35 40 45

Pro Ala Val Thr Asp Leu Asp His Leu Lys Gly Ile Leu Arg Arg Arg
50 55 60

Gln Leu Tyr Cys Arg Thr Gly Phe His Leu Glu Ile Phe Pro Asn Gly
65 70 75 80

Thr Ile Gln Gly Thr Arg Lys Asp His Ser Arg Phe Gly Ile Leu Glu
85 90 95

Phe Ile Ser Ile Ala Val Gly Leu Val Ser Ile Arg Gly Val Asp Ser
100 105 110

Gly Leu Tyr Leu Gly Met Asn Glu Lys Gly Glu Leu Tyr Gly Ser Glu
115 120 125

Lys Leu Thr Gln Glu Cys Val Phe Arg Glu Gln Phe Glu Glu Asn Trp
130 135 140

Tyr Asn Thr Tyr Ser Ser Asn Leu Tyr Lys His Val Asp Thr Gly Arg
145 150 155 160

Arg Tyr Tyr Val Ala Leu Asn Lys Asp Gly Thr Pro Arg Glu Gly Thr
165 170 175

Arg Thr Lys Arg His Gln Lys Phe Thr His Phe Leu Pro Arg Pro Val

180	185	190
Asp Pro Asp Lys Val Pro Glu Leu Tyr Lys Asp Ile Leu Ser Gln Ser		
195	200	205

<210> 7
 <211> 207
 <212> PRT
 <213> Mus musculus

<400> 7
 Met Ala Glu Val Gly Gly Val Phe Ala Ser Leu Asp Trp Asp Leu Gln
 1 5 10 15

Gly Phe Ser Ser Ser Leu Gly Asn Val Pro Leu Ala Asp Ser Pro Gly
 20 25 30

Phe Leu Asn Glu Arg Leu Gly Gln Ile Glu Gly Lys Leu Gln Arg Gly
 35 40 45

Ser Pro Thr Asp Phe Ala His Leu Lys Gly Ile Leu Arg Arg Arg Gln
 50 55 60

Leu Tyr Cys Arg Thr Gly Phe His Leu Glu Ile Phe Pro Asn Gly Thr
 65 70 75 80

Val His Gly Thr Arg His Asp His Ser Arg Phe Gly Ile Leu Glu Phe
 85 90 95

Ile Ser Leu Ala Val Gly Leu Ile Ser Ile Arg Gly Val Asp Ser Gly
 100 105 110

Leu Tyr Leu Gly Met Asn Glu Arg Gly Glu Leu Phe Gly Ser Lys Lys
 115 120 125

Leu Thr Arg Glu Cys Val Phe Arg Glu Gln Phe Glu Glu Asn Trp Tyr
 130 135 140

Asn Thr Tyr Ala Ser Thr Leu Tyr Lys His Ser Asp Ser Glu Arg Gln
 145 150 155 160

Tyr Tyr Val Ala Leu Asn Lys Asp Gly Ser Pro Arg Glu Gly Tyr Arg
 165 170 175

Thr Lys Arg His Gln Lys Phe Thr His Phe Leu Pro Arg Pro Val Asp
 180 185 190

Pro Ser Lys Leu Pro Ser Met Ser Arg Asp Leu Phe Arg Tyr Arg
 195 200 205

<210> 8
 <211> 11

<212> PRT
<213> Human immunodeficiency virus type 1

<400> 8
Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg
1 5 10

<210> 9
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: internalizing
domain derived from HIV tat protein

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Gly Gly Gly Gly Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg
1 5 10 15

<210> 10
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide; PCR primer 2440-39

<400> 10
ccatggctcc cttagccgaa gtc

23

<210> 11
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide; PCR primer 2432-77

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26